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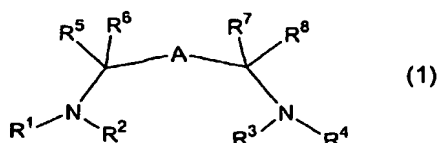
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(54) Title: BIPHOSPHINE RUTHENIUM COMPLEXES WITH CHIRAL DIAMINE LIGANDE AS CATALYSTS



(57) Abstract: Catalysts suitable for asymmetric hydrogenation reactions is described comprising the reaction product of a group
(8) transition metal compound a chiral phosphine and a chiral diamine of formula (1) in which R¹, R², R³ or R⁴ are independently
hydrogen, a saturated or unsaturated alkyl, or cycloalkyl group, an aryl group, a urethane or sulphonyl group and R⁵, R⁶, R⁷ or R⁸
are independently hydrogen, a saturated or unsaturated alkyl or cycloalkyl group, or an aryl group, at least one of R¹, R², R³ or R⁴
is hydrogen and A is a linking group comprising one or two substituted or unsubstituted carbon atoms.



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